



## **Yield10 Bioscience Chief Science Officer Dr. Kristi Snell to Highlight Camelina Platform for Producing PHB Biomaterials to Improve Water Quality at International Scientific Conference**

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WOBURN, Mass., Oct. 04, 2019 (GLOBE NEWSWIRE) -- Yield10 Bioscience, Inc. (Nasdaq:YTEN), an agricultural bioscience company that uses its "Trait Factory" to develop high value seed traits for the agriculture and food industries, today announced that Kristi Snell, Ph.D., Yield10's Chief Science Officer, will present at the 3<sup>rd</sup> International Conference on Plant Synthetic Biology, Bioengineering and Biotechnology which is being held October 4-6 in Cambridge, UK. Dr. Snell's presentation, entitled "Breakthroughs in Plant Based PHB Production: Harnessing Nature to Heal Nature," will be part of Session 5: Novel Bioproducts which is scheduled from 12:30 pm to 2:15 pm local time on Saturday, October 5.

Dr. Snell will discuss the progress made by the Yield10 team to achieve plant-based production of the simplest member of the natural PHA biopolymer family, PHB (polyhydroxybutyrate). The team engineered the PHB production pathway in the cytosol of plant cells, resulting in PHB levels of up to 10.2% of seed weight in the oilseed Camelina. The PHB containing seeds exhibited good seed germination, seedling emergence and survival. These results represent a significant step towards sustainable low-cost commercial production of PHB in plants. Yield10 recently filed a new U.S. [patent application](#) for producing PHB in plants using this novel method.

"Our conference presentation highlights the scientific breakthrough we achieved demonstrating the ability to produce PHB biomaterials at the level of 10% of the mature seed weight in seeds of the plant known as Camelina sativa," said Kristi Snell, Ph.D., Chief Science Officer of Yield10 Bioscience. "PHB-producing Camelina can improve the sustainability of food production as a cover crop, by mitigating nutrient runoff at its source in the field, while also producing a PHB product for use as a denitrifying agent for water treatment that provides revenue to the farmer. Our goal is to begin field testing Camelina plants incorporating PHB in the 2020 and 2021 growing seasons."

Learn more about the 3<sup>rd</sup> International Conference on Plant Synthetic Biology, Bioengineering and Biotechnology on the conference website. On October 5, a copy of Dr. Snell's slide deck will be available on the Yield10 Bioscience [investor relations website](#).

### **Background on Camelina as a Cover Crop and the use of PHB in Water Treatment Applications**

Members of the PHA biopolymer family are of commercial interest as natural, fully biodegradable replacements for plastics but also have well-defined applications in water treatment where they act as growth substrates for denitrifying bacteria normally present in water systems. Food production today is dependent on improved crop genetics and the use of fertilizers to provide essential nutrients. The combination of nutrient run-off from crop production and effluent from human and animal waste is causing nutrient pollution of waterways around the world. As the world's population increases, the need to improve the sustainability of increasing food production and managing nutrient pollution will also intensify.

To address this growing need, Yield10 is approaching the problem at both the farm and the waste water treatment level. On the farm, after the food crop has been harvested, cover crops can be planted to absorb residual nutrients from the soil and reduce run-off into waterways. Planting conventional cover crops, however, typically results in a net reduction in farm income which is why they are not widely planted particularly in times when farmers are struggling. Yield10 is developing engineered Camelina to make new products, including PHB, which have the potential to open new markets and contribute an additional source of revenue for the farmer. Specifically, the seed harvested from the Camelina cover crop could be processed to produce PHB pellets, vegetable oil and animal feed, providing a new economic incentive to farmers to plant cover crops.

The PHB pellets would provide a natural, sustainable, capital-light, cost-effective, zero waste, maintenance-free approach to reducing nitrate levels in water systems. Yield10's economic analysis indicates that the costs associated with producing PHB in crops could enable use of PHB in water treatment to be significantly expanded from current niche markets for aquarium water treatment into a range of waste-water treatment applications, including septic systems and municipal water treatment facilities. The key to realizing this opportunity, as well as the longer-term plastics replacement application, is developing sustainable, scalable, low-cost production systems for PHB and other natural PHA biopolymers.

### **About Yield10 Bioscience**

Yield10 Bioscience, Inc. is an agricultural bioscience company which uses its "Trait Factory" to develop high value seed traits for the agriculture and food industries to achieve step-change improvements in crop yield to enhance global food security and develop specialty crop products. Yield10 has an extensive track record of innovation based around optimizing the flow of carbon in living systems. The "Trait Factory" has two components: the "GRAIN" computational modeling platform, which is used to identify specific gene changes designed to improve crop performance, and the deployment of those changes into crops using genome-editing or traditional agricultural biotechnology approaches. The purpose of the "Trait Factory" is to engineer precise alterations to gene activity and the flow of carbon in plants to produce higher yields with lower inputs of land, water or fertilizer. Yield10 is advancing several yield traits it has developed in crops such as canola, soybean, rice, wheat and corn. Yield10 is headquartered in Woburn, MA and has an Oilseeds Center of Excellence in Saskatoon, Canada.

For more information about the company, please visit [www.yield10bio.com](http://www.yield10bio.com). (YTEN-G)

### **Safe Harbor for Forward-Looking Statements**

This press release contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. The forward-looking statements in this release do not

constitute guarantees of future performance. Investors are cautioned that statements in this press release which are not strictly historical, including, without limitation, that the results of increased PHB levels in Camelina plants represent a significant step towards sustainable low-cost commercial production of PHB in plants; that Yield10's recently filed U.S. patent application for producing PHB in plants will result in an issued patent; that Yield10's products have the potential to open new markets and contribute an additional source of revenue for farmers; that the seed harvested from the Camelina cover crop could be processed to produce PHB pellets, vegetable oil and animal feed, and may provide a new economic incentive to farmers to plant cover crops; that PHB pellets would provide a beneficial approach to reducing nitrate levels in water systems; and that the costs associated with producing PHB in crops could enable use in water treatment to be significantly expanded from current niche markets for aquarium water treatment into a range of waste-water treatment applications, including septic systems and municipal water treatment facilities, constitute forward-looking statements. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those anticipated, including the risks and uncertainties detailed in Yield10 Bioscience's filings with the Securities and Exchange Commission. Yield10 assumes no obligation to update any forward-looking information contained in this press release or with respect to the matters described herein.

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